

INDEX

RUBBER CHEMISTRY AND TECHNOLOGY

VOLUME 51, 1978

AUTHOR INDEX*

- AGGARWAL, S. L., AND R. A. LIVIGNI, Structure and properties of microcomposites and macrocomposites from block polymers, (4) 775
- ANDJELKOVICH, D. A., H. A. TYROLER, D. R. HERMAN, AND A. H. SMITH, Epidemiological studies of chronic diseases in the rubber industry (Abstract), (2) 378
- ANOLICK, C., see SCHMITT, S. W., (5) 888
- APPLEBY, J. W., The multifunction of sodium polyacrylates for the carpet industry (Abstract), (4) 858
- ARENZ, R. J., see TSUGE, K., (5) 948
- ARNOLD, J. W., Automation of reaction injection molding of automotile fascias (Abstract), (4) 855
- ARP, E. W., see HARRIS, R. L., (2) 380
- BAKULE, R., AND A. HAVRÁNAK, The dependence of dielectric properties on crosslink density or rubbers, (1) 72
- BARNES, M., see CRISOSTOMO, L. S., (4) 860
- BARNHART, R. R., AND P. H. MCKINSTRY, A comparison of current bonding agent systems (Abstract), (2) 372
- BAUER, B. J., AND L. J. FETTERS, Synthesis and dilute solution behavior of model star-branched polymers, (3) 406
- BEATTY, J. R., AND P. HAMED, Effect of treated cellulose fibers on cut growth and cutting and chipping characteristics of rubber compounds (Abstract), (4) 856
- , Effect of composition on mold shrinkage of elastomeric compounds, (5) 1044
- BECKER, J. D., see KAZARES, R. E., (2) 368
- BELL, Z. G., see DUNNOM, D. D., (2) 377
- BOTTCHER, see KLINGENSMITH, W. H., (4) 861
- BOWERMAN, H. H., see NAKAJIMA, N., (2) 322
- BOYER, R. F., AND R. L. MILLER, Chain entanglements and chain areas II: A molecular basis for chain entanglements, (4) 718
- BOYLE, J. F., see KAZARNOWICZ, M. C., (2) 386
- BRAME, E. G., see COLEMAN, M. M., (4) 668
- BRANCACCIO, A., L. GARGANI, AND G. P. GUILIANI, Young's modulus and dynamic mechanical properties of SAN resins modified with an ethylene-propylene rubber (ATS resins), (4) 655
- BRASWELL, T. V., see MARTIN, J. W., (5) 897
- BRAUN, D. C., see GROSS, P., (2) 378
- BRAZIER, D. W., AND N. V. SCHWARTZ, Differentiation of natural and synthetic polyisoprene by combined derivative thermogravimetry and gas chromatography, (5) 1060
- BRICHIN, D., see KLINGENSMITH, W. H., (2) 370
- , see KLINGENSMITH, W. H., (4) 861
- BRIGGS, G. J., see BUCKLER, E. J., (5) 872
- BRUZZONE, M., A. CARBANARO, AND L. GARGANI, Crystallizable trans-butadiene-piperylene elastomers, (5) 907
- BRYANT, W. C., see PETERSON, L. E., (2) 386
- BUCKLER, E. J., G. J. BRIGGS, J. R. DUNN, E. LASTIS, AND Y-K WEI, Green strength in emulsion SBR, (5) 872
- BUCKLES, R. G., see YUM, S. I., (4) 855
- BURGESS, W. A., L. DiBERARDINIS, A. GOLD, AND R. TREITMAN, Exposure to air contaminants in tire building (Abstract), (2) 379

* Prepared by L. E. Gwin.

- BURGOYNE, M. D., AND R. J. EVANS, The use of reground scrap as a filler-extender (Abstract), (2) 385
- BYRNE, P. S., E. G. POOLE, AND P. L. FITZGERALD, Latices in carpet applications—present perspectives and future trends (Abstract), (4) 857
- CADLE, S. H., see WILLIAMS, R. L., (1) 7
- CARBANARO, A., see BRUZZONE, M., (5) 907
- CARMAN, C. J., R. A. HARRINGTON, AND C. E. WILKES, Monomer sequence distribution in ethylene-propylene rubber measured by ^{13}C NMR.3. Use of reaction probability model, (2) 149
- CARPENTER, G. T., The effect of zinc oxide particle size and shape on adhesion of rubber to brass-coated steel cord used in radial tires, (4) 788
- CARUTHERS, J. M., AND R. E. COHEN, Thermorheological properties of carbon black filled elastomers, (2) 335
- , see WIJAYARATHNA, B., (5) 1006
- CHIRICO, V. E., see VEGVARI, P. C., (4) 817
- CLARY, J. J., Review of chloroprene toxicity (Abstract), (2) 375
- COHEN, R. E., see CARUTHERS, J. M., (2) 335
- COLEMAN, M. M., ^{13}C NMR characterization of polychloroprene microstructure II: Relaxation, N.O.E., and quantitative measurements, (4) 668
- COLLINS, E. A., see NAKAJIMA, N., (2) 322
- , see NAKAJIMA, N., (1) 110
- COOPER, W. T., H. E. RAILSBACK, AND C. R. WILDER, Carbon blacks in plastomers (Abstract), (2) 373
- CORBELLI, L., Ethylene-propylene copolymer developments in Europe (Abstract), (2) 365
- COTTEN, G. R., AND J. L. THIELE, Influence of carbon black on processibility of rubber stocks III. Extensional viscosity, (4) 749
- COTTRELL, K., Rheological measurements as a quality control tool for silicone rubber formulations (Abstract), (2) 383
- COULTHARD, D. C., see DUNN, J. R., (3) 389
- CRANE, G., R. A. ELEFRITZ, E. L. KAY, AND J. R. LAMAN, Scrap tire disposal procedures, (3) 577
- CRISOSTOMO, L. S., E. L. SANKEY, AND M. BARNES, Determination of the state of cure of finished parts (Abstract), (4) 860
- DAVIS, L. E., see LINDFORS, P. A., (2) 370
- DE, S. K., see MUKHOPADHYAY, R., (4) 704
- DENNINGS, R. W., Economics in molding (Abstract), (4) 853
- DI BERARDINIS, L., see BURGESS, W. A., (2) 379
- DOLEZAL, T., see WILSON, G. J., (4) 859
- DOWDLE, L. T., Carbon black rationalization (Abstract), (2) 375
- DUNNE, J. R., D. C. COULTHARD, AND H. A. PFISTERER, Advances in nitrile rubber technology, (3) 389
- , Unsolved problems in polymer degradation, (4) 686
- , see BUCKLER, E. J., (5) 872
- DUNNOM, D. D., AND Z. G. BELL, Rubber reinforcing silica fillers—an evaluation of their hazards in the rubber industry (Abstract), (2) 377
- ELEFRITZ, R. A., see CRANE, G., (3) 577
- EVANS, R. J., see BURGOYNE, M. D., (2) 385
- FERRY, J. D., AND H. KAN, Interpretation of deviations from neo-Hookean elasticity by a two-network model with crosslinks and trapped entanglements, (4) 731
- FETTERS, L. J., see BAUER, B. J., (3) 406
- FITZGERALD, T. L., see BYRNE, P. S., (4) 857
- FRABLE, N. B., see ZOLIN, D. J., (2) 385
- FUJIMURA, M., T. HASHIMOTO, AND H. KAWAI, Structural changes accompanied by plastic-rubber transition of SBS block copolymers, (2) 215
- FURUKAWA, J., AND E. KOBAYASHI, Alternating copolymerization, (3) 600
- GAN, L. M., AND G. B. SOH, Vulcanization of butyl rubber by *p*-quinone dioxime, (2) 267
- GARGANI, L., see BRANCACCIO, A., (4) 655

- , see BRUZZONE, M., (5) 907
GENT, A. N., AND H. J. KIM, Tear strength of stretched rubber, (1) 35
—, AND G. R. HAMED, Adhesion of elastomers with special reference to triblock copolymers, (2) 354
GENTILCORE, J. E., see ZOLIN, D. J., (2) 385
GERST, D. D., see SADOWSKI, J. S., (4) 858
GERVASE, N. J., J. D. HUTCHISON, AND P. J. LARSEN, The effect of molding variables on adhesion of rubber to metal (Abstract), (4) 853
GIULIANI, G. P., see BRANCACCIO, A., (4) 655
GOLD, A., see BURGESS, W. A., (2) 379
GOLUB, M. A., Thermal rearrangements of unsaturated polymers, (4) 677
GORTON, A. D. T., see PENDLE, T. D., (5) 986
GREEN, H. E., see MARTIN, J. W., (5) 897
GROSS, P., AND D. C. BRAUN, Toxicology of fibers; a brief review (Abstract), (2) 378

HAEMERS, G., AND J. MOLLET, The role of the brass surface composition with regard to steel cord-rubber adhesion (Abstract), (2) 371
HAINES, W. H., Polyurethane molding techniques (Abstract), (4) 854
HAMED, G. R., see GENT, A. N., (2) 354
HAMED, P., see BEATTY, J. R., (4) 856
HARRINGTON, R. A., see CARMAN, C. J., (2) 149
HARRIS, R. L., E. W. ARP, M. J. SIMONS, M. D. VANERT, AND T. M. WILLIAMS, Worker exposures to chemical agents in the manufacture of rubber tires and tubes (Abstract), (2) 380
HASHIMOTO, T., see FUJIMURA, M., (2) 215
HAVRÁNEK, A., see BAKULE, R., (1) 72
HAYS, W. R., G. P. KEHRER, AND C. M. MONROE, Fabricating with liquid silicone rubber (Abstract), (2) 368
HAEELTON, D. R., see SHINADA, Y., (2) 253
HERMAN, D. R., see ANDJELKOVICH, D. A., (2) 378
HERMON, W. C., Molding of tires—an overview (Abstract), (4) 854
HESS, W. M., see VEGVARI, P. C., (4) 817
HEWITT, N. L., see WAGNER, M. P., (2) 371
HINDMARCH, R. S., Monitoring the molding process, (5) 959
HIRAKAWA, H., F. URANO, AND M. KIDA, Analysis of fatigue process of rubber vulcanizates, (2) 201
HUTCHISON, J. D., see GERVASE, N. J., (4) 853

INGHAM, J. D., see MOSESMAN, M., (5) 970

JACHYM, B., see JAMROZ, M., (1) 81
JAMROZ, M., K. KOZŁOWSKI, M. SIENIAKOWSKI, AND B. JACHYM, Use of ESR to investigate formation of free radicals on compounding rubbers with carbon blacks, (1) 81
JOHNSON, C. A., Synthetic rubber plant studies in the United States (Abstract), (2) 381

KAN, H., see FERRY, J. D., (4) 731
KATADA, K., see TANAKA, Y., (2) 168
KAWAI, H., see FUJIMURA, M., (2) 215
KAY, E. L., see CRANE, G., (3) 577
KAZARES, R. E., AND J. D. BECKER, Computer technology applied to process control (Abstract), (2) 368
KAZARNOWICZ, M. C., E. C. OSMUNDSON, J. F. BOYLE, AND R. W. SAVAGE, Cryogenic scrap tire processing (Abstract), (2) 386
KEHRER, G. P., see HAYS, W. R., (2) 368
KIDA, M., see HIRAKAWA, H., (2) 201
KIM, H. J., see GENT, A. N., (1) 35
KLINGENSMITH, W. H., AND D. BRICHZIN, Influence of processing aids on the rubber adhesion to steel cord in adhesive compounds (skim steel cord compounds) (Abstract), (2) 370
—, AND BATTCHEE, Processing agents for better molding (Abstract), (4) 861
KOBAYASHI, E., see FURUKAWA, J., (3) 600
KOJIMA, G., AND H. WACHI, Vulcanization of a fluoroelastomer derived from tetrafluoroethylene and propylene, (5) 940
KOZŁOWSKI, K., see JAMROZ, M., (1) 81

- KRAUS, G., Reinforcement of elastomers by carbon black, (2) 297
- KRUEGER, R. A., see SON, P. N., (4) 764
- KUSANO, T., AND K. MURAKAMI, Chemical stress relaxation of filled vulcanizates under large cyclic deformation, (2) 194
- KYKER, G. S., see WANG, A. S., (2) 366
- LAMAN, J. R., see CRANE, G., (3) 577
- LAMOND, T. G., see SIRCAR, A. K., (1) 126
- , see SIRCAR, A. K., (4) 647
- LANDEL, R. F., see TSUGE, K., (5) 948
- LARSEN, P. J., see GERVASE, N. J., (4) 853
- LASIS, E., see BUCKLER, E. J., (5) 872
- LATTIMER, R. P., AND K. R. WELCH, Field desorption mass spectra of polymer chemicals, (5) 925
- LAUBE, S. G., see MEDALIA, A. I., (1) 89
- LEAVER, A. D. W., The use of rubber for impact protection in automobiles, (1) 139
- LEEPER, H. M., see YUM, S. I., (4) 855
- LINDFORS, P. A., W. M. RIGGS, AND L. E. DAVIS, Application of AES, XPS, and SIMS to the study of adhesion-related metal and polymer surface composition (Abstract), (2) 370
- LIVIGNI, R. A., see AGGARWAL, S. L., (4) 775
- LOW, H., Petroleum extender oils (Abstract), (2) 376
- MARK, J. E., see RAHALKAR, R. R., (1) 45
- , see SU, T. K., (2) 285
- , AND R. R. RAHALKAR, Model networks of end-linked polydimethylsiloxane chains III. Effect of functionality of the crosslinks (Abstract), (4) 852
- MARTIN, B., see SADOWSKI, J. S., (4) 858
- MARTIN, J. W., T. V. BRASWELL, AND H. E. GREEN, Coupling agents for certain types of fluoroelastomers, (5) 897
- MAUSSER, R. F., Acceleration of latex compounds (Abstract), (4) 857
- MC EWAN, I. H., Use of acrylic latex in paints (Abstract), (4) 859
- McKINSTRY, P. H., see BARNHART, R. R., (2) 372
- MEDALIA, A. I., AND S. G. LAUBE, Influence of carbon black surface properties and morphology on hysteresis of rubber vulcanizates, (1) 89
- , Effect of carbon black on dynamic properties of rubber vulcanizates, (3) 437
- MEINECKE, E. A., see WU, L. M., (1) 117
- MILLER, G. H., AND R. H. TOBIAS, Ozonolysis of polyisoprene popcorn polymer, (5) 977
- MILLER, R. L., see BOYER, R. F., (4) 718
- MOLLET, J., see HAEMERS, G., (2) 371
- MONROE, C. M., see HAYS, W. R., (2) 368
- MONTE, J. S., AND G. SUGERMAN, Application of titanate coupling agents in latex and the water phase (Abstract), (4) 858
- MONTECINGO, M., see RAMOS DE VALLE, L. F., (5) 863
- MORIARTY, J. T., see PETERSON, L. E., (2) 386
- MORNINGSTAR, G., AND J. L. REES, Molded sponge rubber (Abstract), (4) 853
- MOSESMAN, M., AND J. D. INGHAM, Smoke properties of highly filled ethylene-propylene-diene terpolymer rubbers, (5) 970
- MUELLER, W. J., Compounding with fillers from nonpetroleum sources (Abstract), (2) 373
- MUKHOPADHYAY, R., AND S. K. DE, Effect of elevated temperature on the unaccelerated and accelerated sulfur vulcanization of natural rubber, (4) 704
- MURAKAMI, K., see KUSANO, T., (2) 194
- MYERS, F. S., AND S. W. NEWELL, Use of power integrator and dynamic stress relaxometer to shorten mixing cycles and establish scale-up criteria for internal mixers, (2) 180
- NAKAJIMA, N., AND E. A. COLLINS, Viscoelastic properties of SBR containing particles of crosslinked polystyrene, (1) 110
- , H. H. BOWERMAN, AND E. A. COLLINS, Nonlinear viscoelastic behavior of butadiene-acrylonitrile copolymers filled with carbon black, (2) 322
- NANCE, P., Standards: implication and impact on the latex industry (Abstract), (4) 857
- NAU, C. A., A study of the physiological effects of carbon black (Abstract), (2) 377
- NEWELL, S. W., see MYERS, F. S., (2) 180
- NIEMEYER, J. H., Design of molds and molded rubber products (Abstract), (4) 852
- NISHI, T., Application of pulsed NMR to elastomeric composite systems, (5) 1075

- O'CONNER, G. E., AND J. B. PUTMAN, Work input control of production batch mixing, (4) 799
- OETZEL, J. T., AND E. N. SCHEER, Hydrin 400, an improved epichlorohydrin elastomer (Abstract), (4) 860
- OHM, R. F., AND T. M. VIAL, A new synthetic rubber, Norsorex polynorbornene (Abstract), (2) 365
- OKUDA, H., see TANAKA, Y., (2) 168
- OLDACK, R. C., AND R. C. WELLS, Rheometer studies on cure behavior of formaldehyde deammoniated natural latex (Abstract), (4) 856
- OONO, R., Distribution of carbon black in SBR, (2) 278
- ORMUNDSON, E. C., see KAZARNOWICZ, M. C., (2) 386
- PAUL, J. P., Rubber reclaim (Abstract), (2) 384
- PENDLE, T. D., AND A. D. T. GORTON, The mechanical stability of natural rubber latexes, (5) 986
- PETERSON, L. E., J. T. MORIARTY, AND W. C. BRYANT, Use of cryogenically ground rubbers (Abstract), (2) 386
- PETT, R. A., AND R. J. TABAR, The oxidative aging of a compounded natural rubber vulcanizate, (1) 1
- PFISTERER, H. A., see DUNN, J. R., (3) 389
- POLE, E. G., see BYRNE, P. S., (4) 857
- PRZYBYLA, R. L., Compounding with silicone rubber bases (Abstract), (2) 367
- PUTMAN, J. B., see O'CONNER, G. E., (4) 799
- RAHALKAR, R. R., C. U. YU, AND J. E. MARK, The ultimate properties of unswollen polydimethylsiloxane networks and their dependence on crosslink density and dilution during crosslinking, (1) 45
- , see MARK, J. E., (4) 852
- RAILSBACK, H. E., see WILDER, C. R., (2) 368
- , see COOPER, W. T., (2) 373
- RAMOS DE VALLE, L. F., AND M. MONTELONGO, Cohesive strength in guayule rubber and its improvement through chemical promotion, (5) 863
- REES, J. L., see MORNINGSTAR, G., (4) 853
- RIGGS, W. M., see LINDFORS, P. A., (2) 370
- ITCHIE, K., see WILSON, G. J., (4) 859
- RODRIGUEZ, F., Classroom demonstrations of rubber properties (Abstract), (2) 383
- ROSEN, S. L., see TUCHMAN, D., (2) 386
- SADOWSKI, J. S., B. MARTIN, AND D. D. GERST, Polyurethane latexes for coagulation dipping (Abstract), (4) 858
- SALOVEY, R., see WIJAYARATHNA, B., (5) 1006
- SANKEY, E. L., see CRISOSTOMO, L. S., (4) 860
- SATO, K., see TANAKA, Y., (2) 168
- SAVAGE, R. W., see KAZARNOWICZ, M. C., (2) 386
- SCALA, R. A., Toxicology of butadiene (Abstract), (2) 375
- SCHEER, E. N., see OETZEL, J. T., (4) 860
- SCHLADEMAN, J. A., A novel theory for the action of phenolic tackifiers (Abstract), (2) 370
- SCHMITT, S. W., AND C. ANOLICK, A new sulfur modified polychloroprene, (5) 888
- SCHWARTZ, N. V., see BRAZIER, D. W., (5) 1060
- SHINADA, Y., AND D. R. HAZELTON, Polyester in reinforced EPDM—Factors affecting thermal degradation, (2) 253
- SIEDENSTRANG, R. W., AND A. K. THORSRUD, High frequency flow-molding of rubber products (Abstract), (4) 861
- SIENIAKOWSKI, M., see JAMROZ, M., (1) 81
- SIMONS, M. J., see HARRIS, R. L., (2) 380
- SIRCAR, A. K., AND T. G. LAMOND, Effect of carbon black particle size distribution on electrical conductivity, (1) 126
- , AND —, Total thermal analysis of NBR vulcanizates, (4) 647
- SMITH, A. H., see ANDJELKOVICH, D. A., (2) 378
- SMITH, T. L., Strength of elastomers. A perspective, (2) 225
- SOH, G. B., see GAN, L. M., (2) 267
- SOMMER, J. G., Molding of rubber—an overview, (4) 738
- SON, P. N., AND R. A. KRUEGER, N-(morpholinio)imides as curing agents in semiefficient vulcanization systems, (4) 764
- STUCKER, N. E., VAMW prediction with a bulk polymer test (Abstract), (2) 384

- SU, T. K., AND J. E. MARK, Effect of strain induced crystallization on the elastomeric properties of *cis*-1,4-polybutadiene networks, (2) 285
- SUGERMAN, G., see MONTES, J. S., (4) 858
- TABAR, R. J., see PETT, R. A., (1) 1
- TABERSHAW, I. R., Social policy and technological health (Abstract), (2) 375
- TANAKA, Y., K. SATO, K. KATADA, Y. TERAWAKI, AND H. OKUDA, Sequence distribution of 1,4-polybutadienes, (2) 168
- TERAWAKI, Y., see TANAKA, Y., (2) 168
- THIELE, J. L., see COTTEN, G. R., (4) 749
- THORSRUD, A. K., see SIEDENSTRANG, R. W., (4) 861
- TOBIAS, R. H., see MILLER, G. H., (5) 977
- TREITMAN, R., see BURGESS, W. A., (2) 379
- TSAI, B. C., Injection molding of rubber: structure, processing, and properties, (1) 26
- , see WU, L. M., (1) 117
- TSUGE, K., R. J. ARENZ, AND R. F. LANDEL, Finite deformation behavior of elastomers: dependence of strain energy density on degree of crosslinking for SBR, (5) 948
- TUCHMAN, D., AND S. L. ROSEN, The mechanical properties of plastics containing cryogenically ground tire (Abstract), (2) 386
- TYROLER, H. A., see ANDELEKOVICH, D. A., (2) 378
- URANO, F., see HIRAKAWA, H., (2) 201
- VAN ERT, M. D., see HARRIS, R. L., (2) 380
- VAN OOIJ, W. J., Mechanism of rubber-to-brass adhesion: effect of rubber composition on the adhesion, (1) 52
- VEGVARI, P. C., W. M. HESS, AND V. E. CHIRICO, Measurement of carbon black dispersion in rubber by surface analysis, (4) 817
- VIAL, T. M., see OHM, R. F., (2) 365
- VLACHOPOULOS, J., Die swell and normal stresses: an explanation, (1) 133
- WACHI, H., see KOJIMA, G., (5) 940
- WAGNER, M. P., AND N. L. HEWITT, A dynamical wire adhesion test (Abstract), (2) 371
- WALKER, L. A., Improved dynamic properties in tires I. Truck and off-the-road tires (Abstract), (4) 859
- WALTER, J. D., Cord-rubber tire composites: Theory and applications, (3) 524
- WANG, A. S., G. S. KYKER, AND J. F. WITNER, Phosphonitrilic fluoroelastomer (PNF-200) compounds with improved mechanical properties and heat resistance via use of silane coupling agents and coagents (Abstract), (2) 366
- WARITZ, R. S., Toxicology of organic peroxide crosslinking agents for elastomers (Abstract), (2) 376
- WEI, Y.-K., see BUCKLER, E. J., (5) 872
- WELCH, K. R., see LATTIMER, R. P., (5) 925
- WELLS, R. C., see OLDACK, R. C., (4) 856
- WHEELANS, M. A., Injection molding of rubber, (5) 1023
- WIJAYARATHNA, B., W. V. CHANG, AND R. SALOVEY, Effects of processing variables on the mechanical properties of carbon black filled polybutadiene-co-acrylonitrile elastomer, (5) 1006
- WILDER, C. R., AND H. E. RAILSBACK, Comparison of retreads made by hot and cold cap processes, (Abstract), (2) 368
- , see COOPER, W. T., (2) 373
- WILKES, C. E., see CARMAN, C. J., (2) 149
- WILLIAMS, R. L., AND S. H. CADLE, Characterization of tire emissions using an indoor test facility, (1) 7
- WILLIAMS, T. M., see HARRIS, R. L., (2) 380
- WILSON, G. J., K. RITCHIE, AND T. DOLEZAL, Compounding elastomers of limited cure functionality (Abstract), (4) 859
- WINTERS, A. E., Recycled rubber with asphalt as a membrane for pavement rejuvenation—a progress report (Abstract), (2) 387
- WITNER, J. F., see WANG, A. S., (2) 366
- WOOD, L. A., Uniaxial extension and compression in stress-strain relations of rubber, (4) 840

- WU, L. M., E. A. MEINECKE, AND B. C. TSAI, Prediction of creep behavior from stress relaxation data for nonlinearly viscoelastic materials, (1) 117
- YU, C. U., see RAHALKAR, R. R., (1) 45
- YUM, S. I., R. G. BUCKLES, AND H. M. LEEPER, Inflation of thin-walled elastic tubes (Abstract), (4) 855
- ZOLIN, D. J., N. B. FRABLE, AND J. E. GENTILCORE, Cryogenic grinding of cured rubber scrap for reuse in molded parts (Abstract), (2) 385

SUBJECT INDEX*

- Abrasion resistance, cold and hot process retreads, (2) 338
- Abstracts of papers: Fall 1977, (2) 365; Spring 1978, (4) 852
- Accelerators, effect on IIR physical properties, (4) 859
effect on NR-brass-coated steel adhesion, (2) 372
field desorption mass spectra of, (5) 925
for latex compounding, (4) 857
- Acrylics, use in latex paints, (4) 859
- Acrylonitrile-butadiene copolymers, see Nitrile Rubber
- Acrylonitrile-butadiene-styrene resin (ABS), ground scrap tire addition to, (2) 386
- Acrylonitrile content, determination in NBR by total thermal analysis, (4) 91
- Acrylonitrile-styrene copolymer, graft copolymer with EPDM, (4) 655
- Adhesion, AES and ESCA use for examining polymer-metal interface, (2) 370
brass surface composition effect on, (2) 371
dynamic test for wire, (2) 371
elastomer, effects of thickness, rate, and temperature, (2), 354
mechanism to brass-coated steel, (1) 52
plasticizer effect on (2) 370
rubber-metal, molding variable effect on, (4) 853
zinc oxide effect on (4) 788
- Aging, of NBR (review), (3) 389
unresolved problems, review of (4) 686
- Air contaminants, during tire building, (2) 380
worker exposure during tire building, (2) 379
- Alternating copolymer, of propylene and tetrafluoroethylene, (5) 940
- Ammonium salts, SBR green strength improvement, (5) 872
- Anionic polymerization, synthesis of star-branched polymers (review), (3) 406
- Anisotropy of injection molded parts, (1) 26
- Antioxidants, field desorption mass spectra of (5) 925
wire adhesion effect on, (2) 372
- Antiozonants, field desorption mass spectra of, (5) 925
- Asbestos, regulation of exposure to, (2) 375
toxicology of fibers, (2) 378
- Asphalt, use with scrap tires as pavement coating, (2) 387
- Auger electron spectroscopy (AES), use for examining polymer-metal adhesive interface, (2) 370
- Austin black, use as fluoroelastomer filler, (5) 897
- Authors, Guide for, (3) G57
- Automotive applications, automated reaction injection molding of fascia, (4) 855
impact absorbers, (1) 1, (1) 139
molding of sponge rubber seals, (4) 854
- Banbury, see internal mixer
- Benzene, regulation of exposure to, (2) 375
- 2-benzothiazyl-4-morpholino disulfide, formation during semi-EV curing, (4) 764
- Benzoyl peroxide, silicone rubber curative, (2) 367
toxicology of, (2) 376
- Best Paper Awards, Fall 1977, (2) G34; Spring 1978, (5) G98
- 2,5-Bis-(t-butylperoxy)-2,5-dimethylhexane, use as silicone rubber curative, (2) 367
- Bis(1-methyl-1-phenylethyl) peroxide, toxicology of, (2), 376
- Bituminous coal fines, elastomeric filler, (2) 373
reinforcement of fluoroelastomers, (5) 897
- Blends, (see also specific materials), pulsed NMR spectra of elastomeric, (5) 1075
- Block Copolymers, carbon black effect on, (2) 373
of styrene and 1,3-butadiene, (1) 35
of styrene, 1,3-butadiene, and EPDM, (4) 775
peel adhesion of, (2) 354
structural changes during plastic-rubber transition, (2) 215
tear strength of, (1) 35
urea-urethane, strength properties of, (2) 225
use of stress relaxation data to predict creep behavior, (1) 117
- Bonding agents, comparison of commercial systems, (2) 372
- Book reviews, Adhesion 1, (2) G40
Adhesion 2, (4) G92
Cationic Graft Copolymerization, (5) G104
Developments in Polymer Degradation, (5) G102
Handbook of Analysis of Synthetic Polymers and Plastics, (2) G39
Handbook of Silicone Rubber Fabrication, (4) G91
Molar Mass Measurement in Polymer Science, (1) G26
Polymer Alloys: Blends, Blocks, Grafts, and Interpenetrating Networks, (4) G90
Polymerization Processes, (5) G103
Understanding Chemical Patents. A Guide for the Inventor, (3) G66

* Prepared by L. E. Gwin.

- Bound rubber, effects on carbon black reinforcement (2) 297
- Brass-coated steel, mechanism for adhesion to, (1) 52
- plasticizer effect on rubber adhesion to, (2) 370
- zinc oxide effect on rubber adhesion to, (4) 788
- Brass surface composition, effect on adhesion, (1) 52, (2) 371
- Bronchitis, occurrence in rubber industry, (2) 378
- Bumper, automobile, rubber use for, (1) 139
- 1,3-butadiene, block copolymers, filler effects, (2) 373
- block copolymer with styrene, (1) 117, (2) 215, (4) 775
- crystallisable polyethylene copolymer, (5) 907
- toxicology of, (2) 375
- Butyl rubber (IIR), carbon black effect on hysteresis of, (1) 89
- curative level effect on, (4) 859
- mold shrinkage of, (5) 1044
- vulcanisation with p-quinone dioxime, (2) 267
- Calcium carbonate, titanate coupling agent effect in SBR latex, (4) 858
- Capillary flow, measurements in NBR vulcanisates, (2) 322
- Capillary rheometer, steady-shear viscosity determination of SBR, (1) 110
- Carbon black, dispersion measurements by surface analysis, (4) 817
- distribution in SBR, (2) 278
- dynamic property effect (review), (3) 437
- effect of mixing variables on NBR dispersion, (5) 1006
- elastomer interactions, use of pulsed NMR, (5) 1075
- elastomer reinforcement by, (2) 297
- elastomer strength properties effect, (2) 225
- extensional viscosity effect on SBR, (4) 749
- free radical formation during compounding, (1) 81
- mold shrinkage effect, (5) 1044
- nonlinear viscoelastic behavior in NBR, (2) 322
- oxidation effect on fluoroelastomer reinforcement, (5) 897
- particle size effect on electrical conductivity, (1) 126
- physiological effects of, (2) 377
- rationalization of, (2) 375
- reinforcement of block polymers, (2) 373
- vulcanizate hysteresis effect of, (1) 89
- Carcinogens, asbestos fibers properties, (2) 378
- carbon black properties, (2) 377
- exposure in the rubber industry, (2) 378
- extender oil properties, (2) 376
- OSHA regulation of, (2) 375
- Carpet, applications of latex, (4) 857
- latex product standards for, (4) 857
- review of latex usage in, (4) 857
- Carpet backing, use of sodium polyacrylate thickener in, (4) 858
- Cellulose fibers, effect on elastomer properties, (4) 856
- Chain entanglements, correlation with polymer chain cross-sectional area, (4) 718
- Charge-transfer complexes, in alternating copolymerization (review), (3) 600
- Chemical bonding, effect on peel adhesion of block copolymers, (2) 354
- Chemical resistance, improvements in NBR (review), (3) 389
- Chlorofluoroethylene, alternating copolymers (of review), (3) 600
- Chloroprene (2-chloro-1,3-butadiene), toxicity of, (2) 375
- Clay, titanate coupling agent effect in SBR latex, (4) 858
- Coal fines, elastomer filler, (2) 373
- reinforcement of fluoroelastomers, (5) 897
- Coating, pavement, use of scrap tires in, (2) 387
- Cobalt complexes, adhesion promoter for brass-coated steel, (1) 52
- Cobalt salts, adhesion promoter for NR, (2) 372
- Cold capping, comparison with hot cap process, (2) 368
- Composites, rubber-cord, theory and applications of, (review), (3) 524
- Compression of rubber, uniaxial, in stress-strain relations, (4) 840
- Compression molding, economics of, (4) 853
- mold design for, (4) 852
- of polyurethanes, (4) 854
- Compression set, of sulfur-modified polychloroprene, (5) 888
- Computers, use in tire tread strip-winding, (2) 369
- Conductivity, electrical, carbon black effect on, (1) 126
- Copolymers, alternating (review), (3) 600
- Copper sulfide, formation during rubber-brass bonding, (2) 371
- Cords, tire, composites with rubber (review), (3) 524
- degradation of polyester in EPDM, (2) 253
- Coupling agents, effect on fluoroelastomer reinforcement, (5) 897
- latex applications of titanates, (4) 858
- use with phosphonitrilic fluoroelastomers, (2) 366
- Creep, coupling agent effect on filled fluoroelastomer, (5) 897
- isothermal, of carbon black-filled SBR, (2) 335
- prediction from stress relaxation data, (1) 117
- Crosslink density, effect on dielectric properties, (1) 72

- effect on neo-Hookian elasticity deviations, (4) 731
- effect on poly(dimethylsiloxane) properties, (1) 45
- effect on rubber-carbon black interactions (review), (3) 437
- effect on strain energy density of SBR, (5) 948
- Crosslink functionality, effect on end-linked poly(dimethylsiloxane), (4) 852
- Crosslinking of elastomers, classroom demonstration of, (2) 383
- Cryogenics, use for fragmenting scrap tires, (2) 386
- use for grinding scrap rubber, (2) 385, (2) 386
- Crystallization, of butadiene-piperylene copolymers, (5) 907
- of elastomers, effect on strength properties, (2) 225
- strain-induced, effect on cis-1,4-polybutadiene properties, (2) 285
- Cure, state of, determination for finished parts, (4) 860
- Curing system, effect on injection molded NR properties, (5) 1023
- effect on polyester degradation to EPDM, (2) 253
- Cushions, foam, molding of sponge rubber, (4) 853
- Cut growth properties of tread compounds, (4) 856
- Cyclization of elastomers during heat aging, review of, (4) 677
- Degradation, elastomer cyclization and isomerization during, (4) 677
- mechanism of polymer, review of, (4) 686
- polymer, review of unsolved problems, (4) 686
- thermal, of polyester tire cord, (2) 253
- Derivative thermogravimetry (DTG), differentiation of NR and IR, (5) 1060
- Dermatitis, occurrence in the rubber industry, (2) 378
- 2,5-di-(*t*-butyldioxy)-2,5-dimethylhexane, toxicology of, (2) 376
- 2, 5-di-(*t*-butyldioxy)-2, 5-dimethyl-3-hexyne, toxicology of, (2) 376
- 1, 1-di-(*t*-butyldioxy)-3, 3, 5-trimethylcyclohexane, toxicology of, (2) 376
- 2,4-dichlorobenzoyl peroxide, silicone rubber curative, (2) 367
- toxicology of, (2) 376
- Dicumyl peroxide, silicone rubber curative, (2) 367
- Die swell, determination of batch variability in internal mixers, (4) 799
- theory for prediction of, (1) 133
- Dielectric properties, crosslink density dependence, (1) 72
- Differential Scanning Calorimetry (DSC), of NBR vulcanizates, (4) 647
- Diffraction, Fraunhofer, use in measuring carbon black distribution in SBR, (2) 278
- Dilution effect, on polydimethylsiloxanes during crosslinking, (1) 45
- Disc fatigue tester, use as dynamic wire adhesion tester, (2) 371
- Dispersion, carbon black, measurement by surface analysis, (4) 877
- Dithiocarbamates, accelerators for latex compounding, (4) 857
- Dynamic adhesion, test for determining elastomer-steel, (2) 371
- Dynamic properties, of styrene-acrylonitrile copolymer grafted with EPDM, (4) 655
- of truck and OTR tires, (4) 859
- Dynamic stress relaxometer, use with internal mixers, (2) 180
- Economics of molding processes, (4) 853
- Efficient vulcanization, effect of elevated cure temperatures on NR curing, (4) 704
- Elastic constants, effect on rubber-cord composites (review), (3) 524
- Elastic modulus, carbon black effect on (review), (3) 437
- of SBR containing crosslinked polystyrene, (1) 110
- Elasticity, classroom demonstrations of, (2) 383
- deviations from neo-Hookian, model for, (4) 731
- Elastomers, adhesion of, effect of thickness, rate and temperature, (2) 354
- injection molding of, (5) 1023
- NMR applications, (5) 1075
- reinforcement by carbon black, (2) 297
- strength properties of, (2) 225
- Electrical conductivity of elastomers, carbon black effect on, (1) 126
- Electrical properties, of epichlorohydrin rubber, (4) 860
- Electron microscope, use for determining block copolymer transitions, (2) 215
- Electron scanning chemical analysis (ESCA), use for brass-coated steel-elastomer interface analysis, (1) 52
- use for metal-polymer adhesive interface analysis, (2) 370
- Electron Spin Resonance (ESR), use for investigating free radical formation during compounding, (1) 81
- Emissions, tire, indoor determination of, (1) 7
- Entanglements, chain, correlation with polymer chain cross-sectional area, (4) 718
- effect on neo-Hookian elasticity deviations, (4) 731
- Epichlorohydrin rubber, Hydrin 400 properties, (4) 860
- Epidemiology, of carbon black, (2) 377
- of chronic diseases in the rubber industry, (2) 378
- of extender oils, (2) 376
- of health hazards in the tire industry, (2) 380

- of silica fillers, (2) 377
- Ethylene-propylene-diene polymers (EPDM), bituminous coal fine filler in, (2) 373
- blends with thermoplastic elastomers, (2) 373
- comparison with peroxide-cured EPR, (2) 365
- effect on polyester thermal degradation, (2) 253
- European developments, (2) 365
- graft copolymer with acrylonitrile-styrene copolymer, (4) 655
- monomer sequence distribution in, (2) 149
- smoke properties of, (5) 970
- Ethylene-vinyl acetate copolymers, carbon black effect on electrical conductivity of, (1) 126
- Extender oils, toxicology of, (2) 376
- Extenders, use of reground rubber as, (2) 385
- Extension of elastomers, uniaxial, in stress-strain relations, (4) 840
- Extensional viscosity, carbon black effect in SBR, (4) 749
- Extrusion of elastomers, theory for predicting die swell, (1) 133
- of liquid silicone rubber, (2) 368
- Fatigue life, of BR vulcanizates, (2) 201
- of EPDM vulcanizates, (2) 201
- of IIR vulcanizates, (2) 201
- of IR vulcanizates, (2) 201
- of NBR vulcanizates, (2) 201
- of NR vulcanizates, (2) 201
- of SBR vulcanizates, (2) 201
- Fatigue mechanism, of NR vulcanizates, (2) 194
- Fatty acid processing aids, (4) 861
- Fibers, asbestos, toxicology of, (2) 378
- cellulose, effect on cut growth properties, (4) 856
- mold shrinkage effect of, (5) 1044
- Field desorption mass spectra of rubber chemicals, (5) 925
- Fillers, cryogenically ground rubber scrap as, (2) 385, (2) 386
- health hazard of silica type, (2) 377
- reduction, effect on truck and OTR tread dynamic performance, (4) 859
- reground rubber as, (2) 385
- Flame retardants, use in silicone rubber, (2) 367
- Flow molding of thermoplastic elastomers, (4) 861
- Fluoroelastomers, coupling agents for, (5) 897
- cryogenically ground scrap rubber in, (2) 386
- phosphonitrilic, silane coupling agents for, (2) 366
- tetrafluoroethylene-propylene, vulcanization of, (5) 940
- Fraunhofer diffraction, measurement of carbon black distribution in SBR, (2) 278
- Free radicals, formation during rubber compounding with carbon black, (1) 81
- Fuel value of scrap tires (review), (3) 577
- Gas chromatography, differentiation of NR and IR, (5) 1060
- Gaseous emissions, tires, (1) 7
- Gel permeation chromatography (GPC), molecular weight distribution of NBR sol fraction, (5) 1006
- Glass transition temperature (T_g), of NBR vulcanizates, (4) 647
- Gloves, manufacture by polyurethane latex dipping, (4) 858
- Goodrich disk fatigue tester, use for dynamic wire adhesion test, (2) 371
- Green strength, guayule versus NR, (5) 863
- of emulsion SBR, (5) 872
- Grinding, cryogenic, of rubber scrap, (2) 385
- Guayule rubber, green strength of, (5) 863
- Guide for authors, (3) G57
- Heat resistance, of phosphonitrilic fluoroelastomer, (2) 366
- of sulfur-modified CR, (5) 888
- Hexamethoxymethylmelamine, adhesion promoter for NR, (2) 372
- Hot capping, comparison with cold capping process, (2) 368
- Hydrin 400, see Epichlorohydrin rubber, (4) 860
- Hydrocarbon resin, theory for tackifier function, (2) 370
- Hysteresis, carbon black effect on (review), (3) 437, (1) 89
- of vulcanizates during fatigue process, (2) 201
- Impact absorbers, automotive, oxidation resistance of, (1) 1
- elastomer applications as, (1) 139
- Industrial hygiene, in synthetic rubber plants, (2) 381
- legislation governing, (2) 375
- Injection molding, economics of, (4) 853
- mold design for, (4) 852
- of elastomers, (1) 26
- of epichlorohydrin rubber, (4) 860
- of liquid silicone rubber, (2) 368
- of polyurethane automobile fascia by RIM, (4) 855
- Input energy during vulcanizate fatigue testing, (2) 201
- Internal mixers, batch uniformity control, (4) 799
- scale-up criteria for, (2) 180
- worker exposure to air contaminants, (2) 379
- Isomerization of elastomers, review of thermal, anaerobic, (4) 677
- Landfills, use of scrap tires in (review), (3) 577
- Latex, accelerators for, (4) 857
- acrylic, paint applications, (4) 859
- carpet applications, (4) 857
- polyurethane, for glove dipping, (4) 858
- product standards for, (4) 857

- sodium polyacrylate thickener for carpet backing, (4) 858
stability of, additive effect in NR, (5) 986
titanate coupling agents for, (4) 858
Lead, red oxidant for *p*-quinone dioxime curative, (2) 267
Legislation of toxic substance exposure, (2) 375
Leukemia, occurrence in the rubber industry, (2) 378
Liquid silicone rubber (LSR), fabricating of, (2) 368
Loss modulus, of SBR containing crosslinked polystyrene, (1) 110
Loss tangent, carbon black effect on, (1) 89, (review), (3) 437
Magnesium hydroxide, smoke retardant for EPDM, (5) 970
Maleic anhydride, alternating copolymers of (review), (3) 600
Martin-Roth-Stiehler Equation, applicability to uniaxial stress-strain data, (4) 840
Mass spectra, of rubber chemicals, (5) 925
Mechanical properties, of filled NBR, (5) 1006
Mechanical stability of NR latex, (5) 986
Mechanical stability time of NR latex, (5) 986
Metal adhesion, to elastomers, molding variable effect on, (4) 853
Microprocessors, use in tire tread strip-winding, (2) 369
Microstructure, of CR, use of ^{13}C NMR to characterize, (4) 668
of IR popcorn polymer by ozonolysis, (5) 977
Mixing, mill, worker exposure to air contaminants, (2) 379
scale up criteria for, (2) 180
uniformity control in batch, (4) 799
variables, effect on NBR mechanical properties, (5) 1006
Modulus, elastic, carbon black effect (review), (3) 437
Moisture, effect on polyester degradation, (2) 253
Mold design for the rubber industry, (4) 852
Mold release agents for silicone rubber, (2) 367
Molding, economics of, (4) 853
high frequency flow, of thermoplastic elastomers, (4) 861
injection, of elastomers, (5) 1023
of elastomers, (4) 738
of polyurethane, (4) 854
of sponge rubber, (4) 853
review of tire techniques, (4) 854
variables effect on rubber-metal adhesion, (4) 853
Mold shrinkage, fiber reinforcement effect on, (5) 1044
Molecular weight, rubber chemicals, by mass spectral analysis, (5) 925
Monomer sequence, in EPDM by ^{13}C NMR, (2) 149
in 1,4-polybutadienes, (2) 168
Mooney-Rivlin equation, application to uniaxial extension and compression, (4) 840
correlation with chain entanglements, (4) 718
use in elastomer network model, (4) 731
Mooney viscosity, determination of batch variability in internal mixers, (4) 799
Morphology, of carbon black, effect on elastomer hysteresis, (1) 89
of carbon black, effect on elastomers reinforcement, (2) 297
of styrene-butadiene block polymers, (4) 775
Natural rubber (NR), adhesion to brass-coated steel, (2) 372
automotive applications, (1) 1
carbon black effect on conductivity, (1) 126
carbon black effect on hysteresis, (1) 89
chemical stress relaxation of, (2) 194
crosslink density effect on dielectric properties, (1) 72
cut growth improvement with cellulose fiber, (4) 856
differentiation from IR, (5) 1060
elevated vulcanization temperature effect, (4) 704
free radical formation during compounding with carbon black, (1) 81
green strength versus guayule, (5) 863
inflation of thin-walled tubular medical reservoirs, (4) 855
injection molding of, (5) 1023
latex stability of, (5) 986
mold shrinkage of, (5) 1044
molding variable effect on metal adhesion, (4) 853
processing agents in, (4) 861
strength properties of, (2) 225
NBR, see Nitrile rubber
Neo-Hookean elasticity, deviations from (4) 731
Neoprene, see Polychloroprene
Nitrile Rubber (NBR) advances in technology (review), (3) 389
bituminous coal filler in, (2) 373
carboxylated (review), (3) 389
cryogenically ground scrap rubber in, (2) 386
mechanical properties of, (5) 1006
mold shrinkage of, (5) 1044
nonlinear viscoelastic behavior of, (2) 322
processing agents in, (4) 861
tear strength of, (1) 35
thermal analysis of (4) 647
thermoplastic (review), (3) 389
N-(2-methyl-2-nitropropyl)-4-nitrosoaniline, green strength improver for guayule, (5) 863

- N-(morpholiniothio)imide, semi-EV system curative, (4) 764
- N-(4-morpholiniothio)phthalimide, use in semi-EV vulcanization systems, (4) 764
- N, N'-bis(4-morpholiniothio) oxanilide, use in semi-EV vulcanization systems, (4) 764
- Norbornene polymers, properties of, (2) 365
- Nuclear magnetic resonance (NMR), EPDM sequence distribution, (2) 149
- polybutadiene sequence distribution, (2) 168
- pulsed, use for elastomer composites, (5) 1075
- use of ^{13}C to characterize CR microstructure, (4) 668
- Nuclear Overhauser Enhancement, for CR microstructure characterization by NMR, (4) 668
- Oil resistance, of epichlorohydrin rubber, (4) 860
- Oscillating Disk rheometer, use for determining batch uniformity, (4) 799
- use for predicting viscosity average molecular weight, (2) 384
- use for silicone rubber quality control, (2) 383
- OSHA, carcinogen regulation, (2) 375
- Oxidation, of NR, (1) 1
- polymer, review of unsolved problems, (4) 686
- Oxidation resistance of NBR (review), (3) 389
- Ozone resistance of NBR (review), (3) 389
- of polynorbornene, (2) 365
- Ozonolysis of IR popcorn polymer, (5) 977
- Paint, acrylic latex applications for, (4) 859
- Paintability, automobile impact absorber requirements, (1) 139
- Particle emissions, tires, (1) 7
- Particle size, zinc oxide, effect on steel adhesion, (4) 788
- Particle size distribution, carbon black, effect on electrical conductivity, (1) 126
- Pavement sealer, scrap rubber in, (2) 387
- Peel adhesion, elastomer, effects of thickness, rate, and temperature, (2) 354
- Peroxides, *cis*-1,4-polybutadiene curative, (2) 285
- ethylene-propylene copolymer curative, (2) 365
- fluoroelastomer curative, (5) 940
- silicone rubber curative, (2) 367
- toxicology of, (2) 376
- Petroleum extender oils, toxicology of, (2) 376
- Phenolic resins, theory for tackifier function, (2) 370
- 1,3-Phenylene bis[2'-(1-methylethylidenedioxy)-2'-methylpropane], toxicology of, (2) 376
- 1,4-Phenylene bis[2'-(1-methylethylidenedioxy)-2'-methylpropane], toxicology of, (2) 376
- Phosphonitrilic fluoroelastomers, silane coupling agents with, (2) 366
- Piperylene, crystallizable 1,3-butadiene copolymer, (5) 907
- Plasticizers, brass coated steel adhesion effect, (2) 370
- field desorption mass spectra of, (5) 925
- rubber-carbon black interaction effect (review), (3) 437
- Plastics, ground scrap tire addition to, (2) 386
- Polybutadiene (BR), coupling agent for fluoroelastomers, (5) 897
- crosslink density effect on dielectric properties of, (1) 72
- sequence distribution of, (2) 168
- strain-induced crystallization effect on properties of, (2) 285
- Polychloroprene (CR), carbon black effect on electrical conductivity of, (1) 126
- cryogenically ground scrap rubber in, (2) 386
- microstructure characterization by ^{13}C NMR, (4) 668
- mold shrinkage of, (5) 1044
- processing agents in, (4) 861
- sulfur modification of, (5) 888
- Poly(dimethylsiloxanes), elasticity constants for endlinked, (4) 852
- property dependence on crosslink density of, (1) 45
- Polyesters, cord degradation in EPDM, (2) 253
- Polyethylene, ground scrap tire addition to, (2) 386
- Polyisobutylene, viscosity average molecular weights from ODR curves, (2) 384
- Polyisoprene (IR), crosslink density effect on dielectric properties of, (1) 72
- differentiation from NR, (5) 1060
- ozonolysis of popcorn polymers from, (5) 977
- Polynorbornene, properties of, (2) 365
- Polypropylene, ground scrap tire addition to, (2) 386
- Polystyrene, blends with block copolymers, (2) 215
- crosslinked, in SBR, (1) 110
- Polyurethanes, automated reaction injection molding of, (4) 855
- latex, glove dipping applications, (4) 858
- molding techniques for, (4) 854
- strength properties of, (2) 225
- Poly(vinyl chloride) (PVC), review of degradation of, (4) 686
- Popcorn polymer, polyisoprene, ozonolysis of, (5) 977
- Powder rubber, NBR, (review), (3) 389
- Power integrator, batch uniformity maintenance with, (4) 799
- use with internal mixers, (2) 180
- Pressure, elastomer-metal adhesion effect during curing, (4) 853
- Process oils, field desorption mass spectra of, (5) 925

- Processing agents, review of fatty acid types, (4) 861
- Propylene, copolymer with tetrafluoroethylene, (5) 940
- Pyrolysis of scrap tires (review), (3) 577
- Quaternary ammonium salts, green strength improvers for SBR, (5) 872
- p*-Quinone dioxide, vulcanization of IIR with, (2) 267
- Radiation, curing of *cis*-1,4-polybutadiene, (2) 285
- Rationalization, carbon black, (2) 375
- Reaction injection molding (RIM), automobile fascia manufacture by, (4) 855
- of polyurethanes, (4) 854
- Reactivity ratios, in alternating copolymerization (review), (3) 600
- Reclaim, adhesive applications, (2) 384
- mold release agent applications, (2) 384
- processes for obtaining, (2) 384
- processing aid applications, (2) 384
- Red lead, oxidizing agent for *p*-quinone dioxide, (2) 267
- Reefs, barrier, scrap tire usage for (review), (3) 577
- Reground rubber, filler-extender usage of, (2) 385
- Relaxation stress, of NR vulcanizates, (2) 194
- Resorcinol, adhesion promoter in NR, (2) 371
- Retreading, comparison of hot cap and cold processes, (2) 368
- Rheology, non-isothermal, of carbon black-filled SBR, (2) 355
- of silicone rubber, (2) 383
- Rheometer, oscillating disk, silicone rubber quality control, (2) 383
- state of cure determination, (4) 860
- viscosity average molecular weight prediction, (2) 384
- Rubber Division, ACS, bylaws, (1) G11
- Best Paper Awards, (2) G34, (5) G98
- Charles Goodyear Medalist, (3) G69
- Guide for Authors, (3) G57
- library and information service, (1) G9
- (2) G35, (3) G54, (4) G84, (5) G99
- officers and committees, (1) G1, (2) G31, (3) G51, (4) G81, (5) G95
- policy on technical papers, (1) G24, (2) G37, (3) G56, (4) G89, (5) G101
- program for Fall meeting 1978, (4) G84
- program for Spring meeting 1978, (1) G5
- Rubber properties, classroom demonstration of, (2) 383
- Rubber reclaim, processes for obtaining, (2) 384
- Rubber, scrap, cryogenic grinding of, (2) 385, (2) 386
- Scrap tires, cryogenic grinding of, (2) 386
- disposal of (review), (3) 577
- ground, addition to thermoplastics, (2) 386
- pavement sealing coatings, (2) 387
- Semi-efficient vulcanization, elevated cure temperature effect on NR, (4) 704
- N-(morpholiniothio)imide curatives in, (4) 764
- NR-brassed steel adhesion effect, (2) 372
- Sequence distribution, determination by ¹³C NMR, (2) 149
- of polybutadiene, (2) 168
- Shear modulus, strain energy density dependence in SBR, (5) 948
- Shoe soles, high frequency flow molding of, (4) 861
- molding from sponge rubber, (4) 853
- Shrinkage, elastomer, fiber reinforcement effect, (5) 1044
- SI units, use and conversion factors, (1) G25, (2) G38, (3) G65,
- Silanes, coupling agents use with phosphonitric fluoroclastomers, (2) 366
- Silica, bituminous coal fine blends as fillers, (2) 373
- block copolymer reinforcement, (2) 373
- health hazards of, (2) 377
- Silicone rubber, bases and modifiers, (2) 367
- crosslink density effect on ultimate properties of, (1) 45
- liquid, fabricating of, (2) 368
- rheological measurements for quality control of, (2) 383
- Silicosis, silica filler contribution to, (2) 377
- Skid resistance of retreads, (2) 368
- Skim compounds, plasticizer effect on steel adhesion of, (2) 370
- Smoke emission, of filled EPDM, (5) 970
- Smoke retardant, use in EPDM, (5) 970
- Sodium polyacrylate, latex thickener for carpet backing, (4) 858
- Solvent exposure during tire manufacture, (2) 379, (2) 380
- Solvent immersion, use for state of cure determination, (4) 860
- Spin relaxation time, characterization of CR microstructure, (4) 668
- Sponge rubber, manufacturing techniques for, (4) 853
- Stability, of NR latex, (5) 986
- Star-branched polymers, dilute solution behavior of (review), (3) 406
- synthesis of (review), (3) 406
- Steady shear measurements, of carbon black-filled NBR, (2) 322
- Stearic acid, elastomer processing agent, (4) 861
- Steel adhesion, brass-coated, mechanism for, (1) 52
- brass-coated, brass surface composition effect on (2) 371
- brass-coated, plasticizer effect on, (2) 370
- zinc oxide effect on, (4) 788
- Strain energy density, crosslink density dependence in SBR, (5) 948
- Stress relaxation of carbon black filled NBR (2) 322
- of injection molded rubber, (1) 26

- of NR vulcanizates, (2) 194
- prediction of creep behavior, (1) 117
- Strip-winding, computer control of, (2) 369
- Styrene, acrylonitrile copolymer, grafting with EPDM, (4) 655
 - block copolymers, filler effect, (2) 373
 - block copolymer with 1,3-butadiene, (1) 117, (2) 215, (4) 775
- Styrene-butadiene rubber (SBR) bituminous coal fine filler in, (2) 373
- carbon black distribution in, (2) 278
- carbon black effect on extensional viscosity of, (4) 749
- crosslinked polystyrene particle effect on, (1) 110
- cut growth improvement with cellulose fiber, (4) 856
- free radical formation during compounding with carbon black, (1) 81
- green strength improvement of, (5) 872
- injection molding of, (5) 1023
- mold shrinkage of, (5) 1044
- strain energy dependence of the crosslink density of, (5) 948
- tear strength of, (1) 35
- thermorheological properties of carbon black-filled, (2) 335
- tire emissions of, (1) 7
- titanate coupling agents in, (4) 858
- Sulfidation, of brass, during rubber-steel bond formation, (1) 52
- Sulfur, CR modifiers, (5) 888
 - dynamic wire adhesion effect of, (2) 371
- Sulfur dioxide, alternating copolymers of (review), (3) 600
- Surface roughness tester, carbon black dispersion measurement by, (4) 817
- Swell, die, theory for predicting, (1) 133
- Swelling, measurements of, in end-linked poly(dimethylsiloxane), (4) 852
- Synthetic rubber plants, industrial hygiene in, (2) 381
- Tackifiers, theory for action of (2) 370
- Tacticity, of alternating copolymers (review), (3) 600
- Talc, titanate coupling agent effect in SBR latex, (4) 858
- Tear resistance, of stretched rubber, (1) 35
 - of sulfur-modified CR, (5) 888
- Temperature, effect on kinetics and structure during NR vulcanization, (4) 704
- Tetrachlorobenzoquinone, adhesion promoter in NR, (2) 372
- Tetrachloroquinone, oxidizing agent for *p*-quinone dioxime curative, (2) 267
- Tetrafluoroethylene, copolymer with propylene, (5) 940
- Thermal analysis, of NBR vulcanizates, (4) 647
- Thermal black, oxidation effect on fluoroelastomer reinforcement, (5) 897
- Thermogravimetric analysis (TGA), of NBR vulcanizates, (4) 647
 - of tire emissions, (1) 7
- Thermogravimetry, use for differentiating NR and IR, (5) 1060
- Thermoplastic elastomers (TPE), filler effect on, (2) 373
 - high frequency flow molding of, (4) 861
 - peel adhesion of, (2) 354
- Thermorheology, of carbon black-filled elastomers, (2) 335
- Thickeners, sodium polyacrylate, for carpet applications, (4) 858
- Thixotropy, of latex containing sodium polyacrylate, (4) 858
- Tires, dynamic properties of, (4) 859
 - rubber-cord composite theory application to (review), (3) 524
 - scrap, addition to thermoplastics, (2) 386
 - scrap, cryogenic fragmentation of, (2) 386
 - scrap, disposal of (review), (3) 577
 - scrap, pavement sealer application, (2) 387
- Tire building, worker exposure to air contaminants during, (2) 379
- Tire carcass, phenolic tackifier action in, (2) 370
- Tire cord, rubber composites of (review), (3) 524
- Tire emissions, indoor test facility for, (1) 7
- Tire molding, review of techniques used, (4) 854
- Tire press, descriptions of various types of, (4) 854
- Tire tread, carbon black dispersion in, (4) 817
 - cellulose fiber to improve cut growth properties of, (4) 856
 - compounding for maximum dynamic performance of, (4) 859
 - computer control of strip-winding, (2) 369
- Titanate coupling agents, latex applications of (4) 858
- Toxicology of asbestos fibers, (2) 378
 - of 1,3-butadiene, (2) 375
 - of chloroprene, review, (2) 375
 - of extender oils, (2) 376
 - of peroxides, (2) 376
 - of raw materials in synthetic rubber plants, (2) 381
- Transfer molding, economics of, (4) 853
 - mold design for, (4) 852
 - of polyurethanes, (4) 854
- Triallyl cyanurate, fluoroelastomer cure promoter, (5) 940
- Tubing, criteria for design of NR medical reservoirs, (4) 855
- Unsaturation level, effect of IIR vulcanizate properties, (4) 859
- Urea, block copolymers, strength properties of, (2) 225
- Vacuum centrifugal casting, of polyurethane, (4) 127
- Vanadium, catalyst for 1,3-butadiene-piperylene copolymer, (5) 907

- Vinyl chloride, regulation of worker exposure to, (2) 375
- Vinylidene cyanide, alternating copolymers of (review), (3) 600
- Viscoelasticity, of carbon black-filled elastomers, (2) 297
- of carbon black-filled NBR, (2) 322
- of SBR containing crosslinked polystyrene, (1) 110
- Viscosity Average molecular (VAMW), of polyisobutylene from rheometer curves, (2) 384
- Viscosity, dilute solution, of model star-branched polymers (review), (3) 406
- extensional, carbon black effect in SBR, (4) 749
- Vulcanization, mechanisms, elevated cure temperature effect on NR, (4) 704
- of IIR with *p*-quinone dioxime, (2) 267
- Work input, batch uniformity effect in internal mixers, (4) 799
- X-ray fluorescence analysis (XRF), interfacial analysis of brass coated steel-rubber interface, (1) 52
- X-ray scattering, structural change determination in block copolymers, (2) 215
- Yamamoto, Misazo, biography of, (2) G44
- Young's Modulus, of styrene-acrylonitrile copolymer grafted with EPDM, (4) 655
- Ziegler catalysts, preparation of alternating copolymers (review), (3) 600
- Zinc, brass-coated steel adhesion effects of, (2) 371
- Zinc oxide, brass-coated steel adhesion effects of, (4) 788

